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CALL FOR FULLER MECHANIZATION OF SUBSIDIARY OPERATIONS; PLANTS ADOPT NEW TECHNIQUES

HAND FINISHING TOO SLOW, COSTLY -- Leningradskaya Pravda, 2 Nov 50

Leningrad machine builders have made great strides toward mechanization of productive processes, but the fact remains, that even in the leading enterprises of the city a great part of these operations are still carried out by hand. In the imeni Stalin and the Elektrik plants, for example, hand operations in basic shops consume half the labor time. This is because most of the engineers and technicians of the enterprises and the specialists of the scientific-research institutes and planning organizations devote their attention chiefly to perfecting techniques of metalworking on machine tools, while overlooking the problem of mechanizing labor-consuming hand operations such as chipping, sawing, cutting off, scraping, grinding, thread cutting, and nut tightening.

An excellent way to reduce labor-consuming operations is through reduction of tolerances in forging. To illustrate, take the turbine bearing, which must not exceed an allowance of 0.2 millimeter. To finish it by hand takes 10-12 hours. If the allowance is reduced, and the finishing operation is completed on a machine tool, working time is cut to one tenth. Reduction of permissible allowance in parts going into an assembly depends to a great degree upon the technical level of the workers in the machine shops. Parts of high precision can be turned out with available plant equipment, and if the turbine bearing can be satisfactorily turned out on a lathe, why should there be such large allowances? Assemblers should demand that the machine shops pare them down.

The Kirov Plant deserves recognition for the original indicator devices it has made. With these attachments one can set up a cutter to the desired measure with extreme accuracy. It remains only to clean off the markings and send the part to the assembly shop. Along with the introduction of progressive methods of machining metal, the proper technology of designing must be pushed. A typical example of this need may be seen in the Plant imeni Lenin. Here certain blades were once finished by hand, wasting a great deal of work time. Plant engineers improved the design of the parts, and now they are ground on a machine.

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Transferring finishing operations from hand labor to machines should greatly increase productivity of labor. Much may be gained, for example, by turning from flat hand scrapers to grinding machines for finishing such parts as cylinders, bearings, diaphragms, keyways, and similar parts. The same applies for machine-tool parts. Finishing of the bed plates, carriage rests, and other parts put out by the Plants imeni Il'ich and imeni Sverdlov could be done on grinding machines. At the Linotip Plant productivity increased tenfold when the hand scraping of slides on bedplates was replaced by grinding.

Application of high-duty attachments and tools means an increase in productivity of labor, a higher quality product, and lower production costs. But, unfortunately, this is not receiving enough attention. In many assembly shops there are no special stands and equipment to make the fitters' work easier. Use of pneumatic and electrical tools should greatly increase efficiency. The Carburetor Plant imeni Kuybyshev tripled labor productivity in one operation by using electric nut tighteners. In a number of other enterprises, protable milling and drilling machines, mechanized tap wrenches, presses and other devices are in operation. All Leningrad enterprises should profit from the experience of these plants.

Special attention should be given fitting and gaging work. Gages are made by hand in the majority of enterprises, using the resources available at the plant. However, experience has shown that in gage work it is practically a necessity to use surface-grinding machines. They considerably speed up the machining process, and ensure high accuracy of finished parts. In this connection, industry is faced with the problem of creating universal finishing and polishing machines, and special mechanical laps. It is further necessary to apply more widely new progressive metalworking methods -- electromechanical and chemical-mechanical -- in gage-making work. The House of Scientific-Technical Propaganda recently organized a seminar under the direction of Professor N. P. Sobolev to study gaging and fitting technology. In these seminars, the work of the Institute of Precision Mechanics and Optics will be widely popularized, as well as the achievements of innovators.

The so-called "light mechanization" of metal-cutting machine tools is also destined to play an important role in raising labor productivity. This entails the utilization of autostops, mechanisms which set up and automatically back off the tool. These autostops should cut down time of subsidiary operations, speed up machining time, and improve the quality of the work.

Specialization of production is becoming more important. It permits wide application of assembly-line methods, and conversion to mechanized processes. These points are well exemplified by the Krasnaya Zarya, Vulkan, and imeni Kuybyshev plants, where specialization is leading to an increase in mechanization of labor-consuming processes.

To achieve mechanization of technological processes, industry must go from individual production of devices and structures of the same type to centralized production of them. This demands national type-designation and standardization.

ADJUST TO NEW PRODUCTION -- Alma-Ata, Kazakhstanskaya Pravda, 26 Nov 50

When the Alma-Ata Heavy-Machine Building Plant was given an order to build drilling tools for the construction of the Kuybyshev GES, it was faced with the manufacture of an entirely new item. Production processes had to undergo partial changes, and the equipment had to be adapted for the new products.

The first impact of the task fell on the tool shop. To produce the boring bars and couplings, special cutters and measuring instruments had to be made. During the consequent period of increased activity, the productivity of labor in the shop rose nearly one third.

Next, a group under Chief Designer V. M. Kolesov made provisions for the additional accounting and calculating necessitated by the new production.

It took some time for the forge shop to master the new techniques called for in turning out the boring bars, which are 6 meters long and weigh 900 kilograms. Forging of the squared part was particularly difficult, requiring skill and coordination on the part of the forger, the steam-hammer operator, and the crane operator. The first tries at it were not altogether successful: one time the square would turn out as a rhombohedron, another time the bottom swage would be placed unevenly, so that the angles did not conform to the blueprints, etc. Finally, however, success was achieved.

In the final stage of production, forged boring bars are machined on a DIP-300 lathe. Here, the cutting of the conical threads on the bar proved the most difficult operation to master. With the completion of the first successfully made boring bar, there was considerable elation at the plant.

The Stalingrad GES construction enterprise has ordered three high speed SLK-42 scraper-conveyer winches from the plant. These winches are standard products for the plant, but the importance of the new order has spurred on workers to redouble their efforts.

FOUNDERS AIDED BY OTHER PLANTS -- Yerevan, Kommunist, 5 Nov 50

The Yerevan Small Hydroturbines Plant, given the task of producing hydroturbines for rural electric stations of the Armenian SSR and sister republics, depends on the work of its foundry for the successful filfillment of this task. To help improve casting technology, meetings have been held, with specialists on foundry work from other Yerevan machine-building plants participating. The foundry is comparatively new, but is gradually improving. Devices for intershop transport and for lifting parts onto machine tools have been recently installed.

Formerly models of the new turbines were obtained from other enterprises but the plant made its own models for its new powerful hydroturbines.

There are still many serious shortcomings in the work of the plant, but the management is striving hard to overcome them.

NEW MACHINES AID FOUNDERS, WELDERS -- Moscow, Vechernyaya Moskva, 18 Nov 50

The Central Scientific-Research Institute of Technology and Machine Building has collaborated with machine-building plants in creating dozens of new machines and devices.

The wear-resistance section of the laboratory has developed a machine designed by Engineer M. I. Chuloshnikov. Capable of exerting a maximum force of 30,000 kilograms, it can measure to an accuracy of one percent the force at which breakage or deformation of a material occurs. Curves depicting the characteristics of the materials tested are automatically drawn. Plans have been made for series production of the machine.

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In the foundry section of the institute, there is a new device for testing molding materials. It measures their resistance to breakage and deformation at temperatures of up to 1,400 degrees. Findings are recorded on a paper strip, or on film. The machine heats the mold mixture electrically.

The institute's welding section has produced a special unit for coating electrodes under high pressure. Coated electrodes are used in hand electric-arc welding. The device greatly speeds up the coating process, and improves the quality of the electode. There is a press which puts out hundreds of electrodes per minute. Several dozen such machines are being made in plants for industrial application. Another, better press, has since been built by the workers of the section. Its small size allows it to be used for research work in a laboratory.

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